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RESEARCH REPORT

THE BATTLE OF BRITAIN REVISITED

GROUP CAPTAIN JOHN H. SPENCER
ROYAL AIR FORCE

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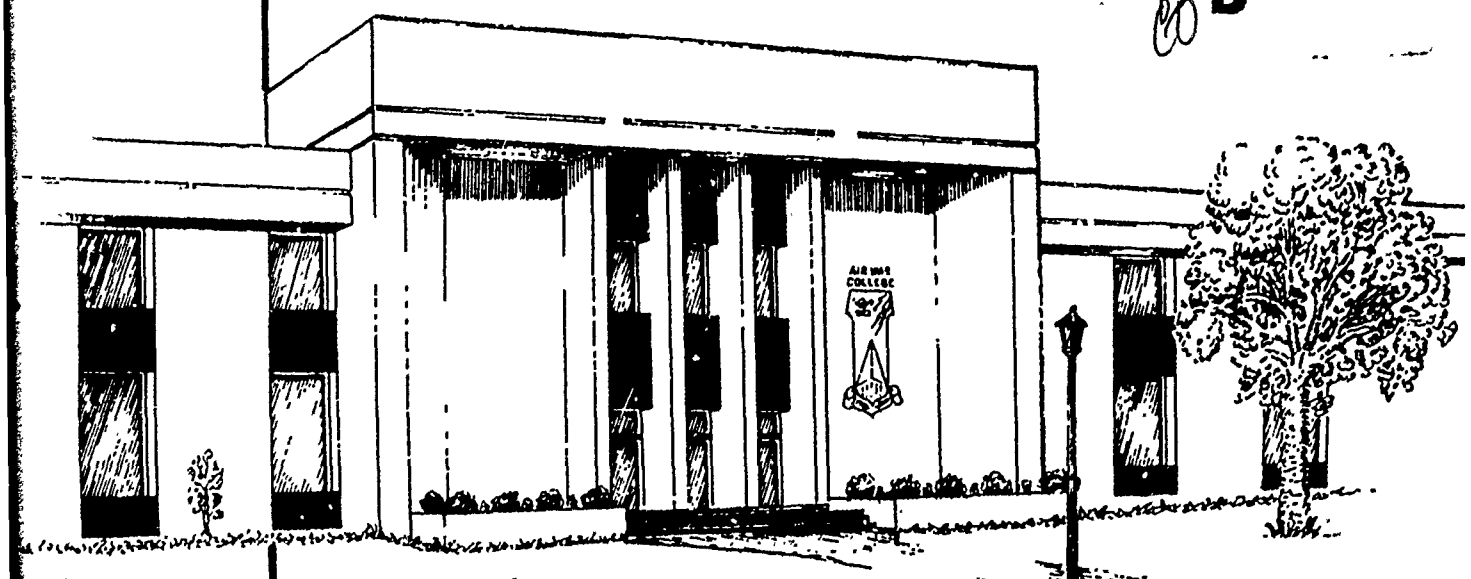

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THE BATTLE OF BRITAIN REVISITED

by

John H. Spencer
Group Captain, RAF

A DEFENSE ANALYTICAL STUDY SUBMITTED TO THE FACULTY

IN

FULFILLMENT OF THE CURRICULUM

REQUIREMENT

Advisor: Doctor James A. Mowbray

MAXWELL AIR FORCE BASE, ALABAMA

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EXECUTIVE SUMMARY

TITLE: The Battle of Britain Revisited

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The importance of air defence in the context of NATO is clear. This study examines An examination is made of a successful air defence campaign of the past to highlight those aspects which seem of particular relevance to the present day. The Battle of Britain is looked at from both the German and British sides and the causes of the victorious result for the defence are analysed. These factors are then related to the present, to point out both the strengths and weaknesses of current air defence systems.

BIOGRAPHICAL SKETCH

Group Captain John H. Spencer has been employed in air defence duties for the majority of his service in the Royal Air Force. He has served on air defence fighter wings as junior pilot, weapons and tactics instructor, flight commander, squadron commander and finally, wing commander. He is a Commander of the British Empire and holds the Air Force Cross. He has served in both NATO and national appointments and has always been interested in the Battle of Britain. Group Captain Spencer is a graduate of the British National Defence College and of the Royal Air Force Air Warfare Course. Group Captain Spencer is a graduate of the Air War College, class of 1989.

TABLE OF CONTENTS

CHAPTER I

INTRODUCTION

The North Atlantic Treaty Organization (NATO) was formed as, and remains, a defensive alliance. It is axiomatic therefore, that in the event of a war in Europe, NATO forces would be initially on the defensive. It is also likely that the Warsaw Pact (WP) forces would use all the considerable means at their disposal to achieve their war aims, including air power, and in the past 50 years or so, air power has had a considerable, some would even say a decisive, role to play in the conduct of war. From the foregoing, it can be seen that NATO air defences would be a vital pillar in the overall defence of Western Europe and that should they fail, or be overcome, then the achievement of NATO war aims would be made very much more difficult. In this context, it would seem worthwhile to examine one of the very few air defence campaigns of the past that succeeded and to see what lessons can be learnt from it that have relevance for today.

Arguably, the most notable example of a successful air defence campaign was the Battle of Britain, which took place in the summer and autumn of 1940. Many books articles, and reminiscences have been published about the struggle and this study does not intend to give a detailed blow-by-blow account but rather to analyse the campaign and

highlight those aspects which seem of particular importance to the outcome of the battle. It may be that some of these illuminate the eternal verities of warfare and are therefore as important today as they ever were.

CHAPTER II

SETTING THE SCENE

Operation Sealion

Starting on 10th May 1940, it took the German Army and Air Force just six weeks and one day to become the masters of continental Europe. The Low Countries were overrun, the British and some French were forced into a humiliating evacuation at Dunkirk and France itself surrendered on 22nd June. It was a masterly campaign by the Wehrmacht, illuminated by bold and imaginative strategy, close integration of infantry, armour and air power and executed with ruthless determination. The war was totally transformed and even the victors seemed somewhat surprised and uncertain about what to do next. It was a logical strategic sequel for Hitler to dispose of the British, but time was wasted in the forlorn expectation of British overtures for peace. Instead of acquiescence to German feelers, Winston Churchill responded with:

> What General Weygand called the Battle of France is over. I expect the Battle of Britain is about to begin. The whole fury and might of the enemy must very soon be turned on us. Hitler knows that he will have to defeat us in this Island or lose the war. If we can stand up to him, all Europe may be free. . . .[1]

Faced with such intransigence, Hitler was forced into the disagreeable option of seriously considering an invasion. However, it was not until 16th July that he

issued his Directive No 16 "Preparation for a Landing Operation Against England." In the preface to this directive Hitler wrote:

> As England despite her hopeless military situation still shows no sign of willingness to come to terms, I have decided to prepare, and if necessary to carry out a landing operation against her.
>
> The aim of this operation is to eliminate the English motherland as a base from which war against Germany can be continued, and if necessary, to occupy the country completely. . . .[2]

Armed with Directive No 16, the Oberkommando der Wehrmacht (OKW), the German Armed Forces General Staff, started to plan for the invasion of England, Operation Sealion. The German Army's initial desire was for a broad front landing by some 13 divisions in three separate areas. The German Navy, on the other hand, seriously doubted its ability to carry out such an ambitious scheme in the face of the inevitable reaction of the Royal Navy and much preferred a narrow front landing. These differences were resolved, in the Navy's favour, by Hitler on 16th August.[3] At this same conference, an invasion date of 15th September was set by the Fuhrer. Despite their other disagreements, there was one matter on which both the German Army and Navy agreed; the imperative necessity of air supremacy over the Channel and the projected landing sites.[4]

In contrast to the lukewarm response of the Army and the pessimism of the Navy towards Sealion, the Luftwaffe was keen to go. Indeed, Goering, fired by the Luftwaffe's

successes over Poland, the Low Countries, and France felt that just four days of intensive operations would be sufficient to eliminate the air defences and four weeks would so dislocate British resistance that Sealion would be a simple and bloodless triumph and might not even be necessary at all.[5] It was in this mood of heady optimism that the corpulent Luftwaffe chief turned to planning his strategy.

Comparison of Forces

According to common sense and Clausewitz, it is a fundamental requirement of strategy that the objective sho· ld be tailored to the means. The main Luftwaffe forces which Goering could call on were Luftflotte 2 under Field Marshal Kesselring and Luftflotte 3 under Field Marshal Sperrle, based in Belgium and north-western France. At the start of the Battle of Britain these forces amounted to about 2600 aircraft broken down as follows:[6]

1200 bombers
280 dive bombers
760 single-engined fighters
220 twin-engined fighters
140 reconnaissance aircraft

In addition, there were some 190 aircraft in Norway which could be called upon, together with a small force of single-engined fighters for local defence. Despite the preponderance of bombers, and despite the pre-war theorists,

it was the single-engined Me109e which in the event, was to prove the most influential aircraft on the conduct of the battle, from the German point of view. This fighter was formidable opponent but, in common with other comparable types, it suffered from a small radius of action.

Opposing the Luftwaffe, Royal Air Force Fighter Command had 31 squadrons of Hurricanes and 19 squadrons of Spitfires; a total with reserves of approximately 800 aircraft.[7] Of these two types, comparative tests confirmed the current opinion that although the Spitfire was at least the equal of the Me109e, the Hurricane was definitely inferior.[8] Nor was this all. At the outset of the battle, the Luftwaffe fighters also enjoyed a tactical superiority. In the proving grounds over Spain, Poland, and the western front, German fighter pilots had developed and refined simple, flexible and effective formations which allowed them to exploit the advantage of their aircraft to the utmost. Fighter Command's tactics and formations were archaic by comparison and had been designed to cope with small formations of unescorted bombers. They were difficult to fly and complicated to execute and instead of unescorted bombers, Fighter Command pilots were to be confronted by hard-hitting Me109s.[9] Inevitably, mounting losses and experience caused the British pilots to adopt more sensible formations and by the end of the battle, most

RAF squadrons had adopted formations and tactics rather similar to those of the German fighter forces.

The Luftflotte

Although the Luftwaffe had flirted with the concept of developing a strategic bombing force, the death of its main protagonist, General Wever in June 1936, effectively confined the Luftwaffe to tactical operations in support of the German Army.[10] The main operational organisation of the Luftwaffe was the Luftflotte or air fleet. These formations were essentially self-contained, small air forces with fighters, bombers, dive bombers, etc., under their control and were allocated to the various army groups. Thus, although there may have been ongoing discussions inside the Luftwaffe about the efficacy of strategic bombing, the service as a whole was simply not organised to operate in an independent way. And yet

> for the first time in history an attempt was made to use air power to cripple an enemy. . . .[11]

With no real strategic doctrine, with no experience to fall back on and with pre-war theories at odds with observed actuality, the Luftflotten prepared for battle.

The Fighter Command System

As a nation, the British have often been accused of somehow "muddling through" but this calumny cannot be levelled at the Fighter Command of 1940. Air Chief Marshal Dowding, the Commander-in-Chief, had worked persistently and

effectively for four years to develop the structure and doctrine of Fighter Command. The system he had nurtured tied together all the various strands of air defence into a cohesive whole and it was based on firm concepts of command and control linked by technology.

Command and Control

The organisation under Fighter Command Headquarters divided the country into specific areas, with each area being the responsibility of an individual group. There were four groups in all, with the most important being No 11 Group which covered the south east of England. Each group was further sub-divided into sectors with the focal point of each sector being a main fighter airfield. These fighter airfields, called sector stations, also looked after smaller satellite airfields and would generally have two or three fighter squadrons based on them. The responsibilities of each level of command were very carefully and precisely delineated. In the operational sense, Fighter Command Headquarters had three responsibilities. Firstly, in the long term, allocating fighter squadrons to the groups and redeploying them between the groups when necessary. Secondly, it was the only place to where the basic radar information was reported and it was responsible for filtering that information to remove duplications and other anomalies, before relaying the sanitised air picture to the groups and sector stations. Thirdly, in the immediate

sense, it was responsible for arbitrating in any disputes between adjoining groups, if that was necessary. Apart from this, Fighter Command Headquarters played no part in the day-to-day operation of the Command.

The group headquarters were responsible for deciding the readiness posture of the squadrons in the group and ordering deployments to satellite airfields as they saw fit. They were also responsible for deciding which sector would respond to which air raid inside the group boundaries, but they were not permitted to direct which squadron would be employed against which raid nor were they allowed to have any control of the squadrons once they were airborne. It was the responsibility of the sector stations to decide which squadron or squadrons were to be sent against which raid and to control them until contact was made with the enemy. Thereafter, the squadron commander was responsible for the engagement itself. This system allowed each component part to become expert in its own role and perhaps more importantly, prevented any interference by higher authority in the actions of the subordinate formations.

Technology

The first requirement of the Fighter Command System was to provide warning of attack, and the main means used to achieve this was radar. In 1940, radar was still in its infancy but it was sufficiently developed to detect aircraft out to about 80 miles. In other words it could provide some

20 minutes of warning before the enemy crossed the coast. What it could not do was to provide either the height or the numbers of the enemy with any degree of accuracy. Nevertheless, even with these limitations, its importance in the battle was fundamental. The radar plots were passed from the radar stations to Fighter Command Headquarters where they were first filtered and numbered and then passed to the Group Headquarters and Sector Stations. By this means all the various levels in the chain of command were working with the same information which in turn, simplified the command and control arrangements. Once the enemy had crossed the coast inbound, the responsibility of tracking them rested with the eyes and ears of the Royal Observer Corps (ROC). This was not ideal but was necessary because radar could not detect aircraft overland. The ROC reported direct to the groups rather than to the Command because as mentioned earlier, the groups were the focal point for fighting the battle.

As well as detection, there was also the requirement for identification. After a particularly unfortunate case of Spitfires shooting down Hurricanes early on in the war, minds were concentrated sufficiently to introduce Identification Friend or Foe (IFF) before the battle commenced.[12] This enabled the fighter controllers to keep track of their own formations and by inference, separate friendly from hostile forces.

There were two other sources of information available to the defenders. The first was radio interceptions and monitoring whereby Luftwaffe R/T transmissions would be picked up by listening posts and the information used to provide immediate tactical intelligence. Of course, to be useful, such intelligence had to be relayed very quickly indeed and this was not always possible but by the end of the battle, the time lag was down to just one minute.[13] The second source was the Ultra organisation which had managed to penetrate the German cypher system. It would be wrong to imply that Ultra gave Fighter Command total information about Luftwaffe intentions day-to-day or even played a major part in the British victory. The organisation was still in its early days and was by no means the comprehensive and streamlined system that it was to become. Nevertheless, it contributed its part to the overall mosaic of intelligence which was a considerable help during the battle.[14]

Tying this whole system together was a sophisticated web of communication. Without the tremendous efforts of both service and civilian organisations to provide and maintain these links, the rest of the technology and the command and control system itself would have been useless and little more than window dressing.

The Balance

At the start of the campaign, the Luftwaffe forces outnumbered Fighter Command by a margin of over three to one. In terms of fighters only, both sides were evenly matched in numbers but the Luftwaffe had a technical edge, as the Me109 was superior to the Hurricane, with which the majority of Fighter Command squadrons were equipped. The German fighter force also had the benefit of superior tactics, although this advantage eroded as the battle progressed. On the other hand, the small radius of action of the Me109 meant that in effect, the Luftwaffe was confined to operating over a restricted area.[15] However, as this area included the proposed invasion sites and some 50 miles or so of hinterland, it should not have precluded the achievement of the necessary air superiority to clear the path for Sealion.

Fighter Command's advantages lay mainly in the areas of Command, Control, Communications, and Intelligence (C^3I). Without this system, Fighter Command would have been unable to fight effectively and it is a fact that despite the efforts of the Luftwaffe, the system proved robust enough to function with increasing sureness, throughout the whole campaign. German intelligence on the other hand, whilst giving a reasonable assessment of the numbers and capability at the start of the battle failed in two major areas. Firstly, it failed to understand how the Fighter Command

System worked and wrongly assumed that it was ponderous and inflexible.[16] Secondly, it failed to maintain an accurate Fighter Command order of battle. Misled by the exaggerated claims of the Luftwaffe fighter force, which over-claimed by a factor of three to one, German intelligence became more and more inaccurate as time went on.[17] Another advantage accruing to Fighter Command was that the British aircraft industry out-produced their German rivals by a considerable margin. As an example, Germany produced 775 Me109s during the months of June, July, August and September whereas Britain produced over twice as many Hurricanes and Spitfires in the same period.[18] Finally, the British were fighting over their own homeland with all the moral and material advantages that that gave.

CHAPTER III

THE BATTLE

Outline of the Campaign

It is generally accepted in both British and German accounts of the battle that it started in July 1940 and finished at the end of October 1940. Inside that time frame it is also accepted that the battle can be divided into various stages, although accounts differ as to the precise demarkation between these phases. As the Luftwaffe held the strategic initiative, insofar as it was the attacker, it would seem reasonable to delineate the campaign in accordance with the German strategy as it unfolded. The key dates were:

30th June - Goering issued a Directive to focus the Luftwaffe's attention against Britain.[1]

1st August - Hitler's Directive No 17 ordered the Luftwaffe to destroy the British Air Force. The operation was to be called Adlerangriff (the attack of the Eagles.)[2]

6th August - Goering ordered the opening of Adlerangriff for 10th August. This was subsequently delayed to 13th August because of poor weather.[3]

19th August - Goering ordered the Luftwaffe to concentrate its attention onto Fighter Command.[4]

3rd September - After a stormy meeting in the Hague, Goering ordered the Luftwaffe to attack London.[5]

16th September - Goering decided to resume attacks on Fighter Command and the aircraft factories; leaving London to the night bombers.[6]

17th September - Hitler postponed Sealion indefinitely.[7]

30th September - The Luftwaffe bomber force was withdrawn from the daylight battle to avoid further losses.[8]

As far as the Luftwaffe operations in pursuance of Sealion were concerned, the critical period was from 13th August, the opening of Adlerangriff, to 17th September, the postponement of the invasion. These five weeks were vitally important for both Germany and Britain and are examined in further detail below.

The German Side

It should be remembered that the task of the Luftwaffe was to gain control of the skies above the Channel and the selected landing sites for Sealion. There was no doubt on the German side, and precious little on the

British side, that if the German Army ever got ashore in the planned numbers, it could defeat the British.[9] After the debacle of Dunkirk there was only one British division, the 3rd under Major General Montgomery, that could be considered a battle ready fighting force. The rest of the British Army had abandoned most of its equipment in France, and although matters had improved significantly by September, the land forces were thinly spread to cover possible landing areas. The problem thus boiled down to crossing the Channel, and air superiority was the key. With it, the Germans and the Luftwaffe in particular, felt that they could hold off both the Royal Navy and the Royal Air Force to an extent sufficient to allow the landing to take place.

Even prior to Directive No 16, Goering had given orders for the Luftwaffe to attack Britain's war industry and supply lines, particularly shipping in the Channel. In this same directive of 30th June, he had also stated:

> So long as the enemy air force remains in being, the supreme principle of air warfare must be to attack it at every opportunity . . . with priority over other tasks. . . .[10]

This entirely reasonable objective was reinforced by Hitler's Directive No 17, issued on 1st August which ordered:

> The Luftwaffe will use all the forces at its disposal to destroy the British Air Force as soon as possible. . . .[11]

The actual attack, Adlerangriff, started on 13th August and immediately revealed problems. The first raid was due to take place in the morning but, not unusually, the weather turned out to be different than forecast and the operation was postponed. Unfortunately, only the fighters were given the message and because there was no common radio link between the bombers and the fighters, the latter could not inform the former. So, instead of a well-planned and coordinated attack, a group of unescorted bombers flew across the channel and paid the price.[12]

Two days later, in what turned out to be the heaviest day of the battle, an attempt was made by Luftflotte 5 from Norway to out flank the British defences by attacking targets in the north of England. Because of the distance, there was no escort of Me109s and 20 of the attacking aircraft, some 15 percent of the total were destroyed without loss to the defenders. Furthermore, none of the targets attacked was part of Fighter Command.[13] Luftflotte 5 took no further part in the battle.

On the 19th August a period of bad weather gave both sides the opportunity to take stock. Two hundred and fifty-five Luftwaffe aircraft had been lost since the 13th, as against 104 British fighters.[14] More importantly, German bomber losses had been particularly heavy with the Ju 87 dive bombers taking the brunt. As a result, the Ju 87, like Luftflotte 5, was withdrawn from the battle.[15] Moreover,

many of the targets that had been attacked were not part of Fighter Command and were thus a wasteful diversion of resources away from the aim, to gain air superiority.

Goering decided to make changes. Firstly, he concentrated almost all his fighters in the Pas de Calais area as it was becoming apparent that only a preponderance of escorting fighters could protect the bombers from critical losses. Along the same lines, he supported his bomber crews in their appeals for more numerous close escorts. This did not go down well with the hard pressed Me109 pilots, who felt that the best results would be achieved by allowing them free range to attack British fighters, rather than tying them to the bomber formations.[16] Finally, Georing ordered that attacks should be concentrated against Fighter Command, although not understanding the system, he unwisely excluded the radar stations from his list.

The next phase of the battle started on 24th August and lasted through to 6th September. The greater concentration of German fighters and the greater concentration against Fighter Command began to tell and by the end of this phase, the Luftwaffe had wrested a measure of superiority over the vital battlefield of south-east England. Unfortunately, faulty German intelligence tended to blur this fact and also time was pressing; the planned invasion date was only nine days away. As well as this,

British bombers, in a riposte to an accidental German bombing on London, had bombed Berlin on the night of 25/26 August. Although little damage was caused, it had a stimulating moral effect on both the British and the Germans. In particular, it caused Georing considerable annoyance and he was still smarting from his loss of face in the eyes of both his Fuhrer and the German people, when he held a meeting in the Hague on 3rd September.

According to German intelligence reports, Fighter Command had only some 300 or so fighters left. Kesselring seized upon this to put forward his long held view that a concentrated attack on one key objective would force Fighter Command to commit all its fighters to defend this target and thus result in it being finally destroyed. Sperrle scoffed at this idea. His view was that the intelligence reports were wrong and that the RAF still had a fighter strength of nearer 1000. He considered that a continuation of the present strategy would finally dislocate the British command and control system and thus effectively destroy Fighter Command's ability to resist, even if it failed to annihilate the fighters. He may have been right, but Goering, whose prophecies about sanctity of the Fatherland had been proved as fallible as his estimate of Fighter Command's destruction, plumped for Kesselring's approach.

Accordingly, on 7th September the Luftwaffe turned away from its assault on Fighter Command and attacked

London. With the uncertainties of the air situation in mind, the OKW delayed the invasion date for Sealion to the 24th September with a final decision to be made on the 17th.[17] Both the German Army and Navy were waiting to see whether Goering's new strategy would work. The daylight attacks on London continued until 15th September, when the Luftwaffe suffered a crushing defeat at the hands of a rejuvenated Fighter Command. Two days later, Hitler postponed Sealion indefinitely and turned his face eastwards towards Russia.

After 15th September, a culminating point if there ever was one, the Luftwaffe's efforts generally reduced in strength until by the end of October, the Battle of Britain was over and:

> The objective of the Luftwaffe in the Battle of Britain was not achieved. The Battle of Britain was lost by Germany.[18]

> From the strategic point of view it was a failure and contributed to our ultimate defeat. The decision to fight it marks a turning point in the Second World War. The German Air Force was bled almost to death and suffered losses which could never again be made good throughout the course of the war.[19]

The British Side

In Dowding's mind the task facing his Command in 1940 was clear:

> Mine was the purely defensive role of trying to stop the possibility of an invasion, and thus give this country a breathing spell . . . it was Germany's objective to win the war by invasion, and it was my job to prevent the invasion from taking place.[20]

In other words, Fighter Command's objective, like war itself, was intrinsically simple but enormously difficult to carry out. It was to remain in being as an effective air defence despite everything the Luftwaffe did against it. We have seen that the Luftwaffe's area of operations was in general, and for good reasons, confined to the south-east corner of England. This meant that the main burden of the attack would be borne by No 11 Group, whose area of responsibility extended in an arc, centered just north of London, from the east to the south-west. There were seven Sector Sections in the group, each one capable of supporting and controlling up to three squadrons. This gave the Air Officer Commanding 11 Group, Air Vice Marshal Park, a fighting force of some 250 aircraft. The remaining 30 or so squadrons were spread between the other groups but they could be and were, redeployed into 11 Group to replace exhausted units and allow the latter to be pulled back to reco er.

Park was the ideal man to command this vital area. He had worked closely with Dowding and his views harmonised well with those of his chief. If Dowding was the composer of victory, Park was the conductor. Realising that sooner or later the Luftwaffe would concentrate its efforts against him and realising both the strengths and weaknesses of the system, he based his plans on three concepts. Firstly, the objective of his squadrons was not to be fighter versus

fighter engagements but rather to concentrate against the German bombers. Secondly, he knew that his comparatively few major bases were vulnerable and therefore his intention was to intercept the bombers before they reached their targets. Thirdly, he saw very clearly that the main problem facing both him and the Command as a whole, would be a shortage of experienced pilots rather than aircraft and early on in the battle, he discouraged engagements over the sea. There was no effective means of rescuing pilots who had been shot down and landed in the sea and a high proportion of those who were, had not been recovered.[21]

Within these basic concepts, Park showed a sensitive awareness to shifts and nuances in enemy tactics and the flexibility of his response to these changes is highlighted by the fact that he issued no less than 35 instructions to his Group in the course of the battle.[22] He had his finger very firmly on the pulse of the campaign and was hardly ever caught out by the Luftwaffe.

Park's strategy in the first major phase of the battle worked well. As we have seen, his concentration against the German bombers forced the Luftwaffe to withdraw its dive bombers from the battle early on, and the Ju 87 accounted for about 10 percent of the Luftwaffe forces. It also led to a higher proportion of the Me109s being allocated to the close escort role than the German fighter pilots either wanted or thought wise. However, and despite

the encouraging kill ratio, thought at the time to be even better than was in fact the case, there were causes for concern. Fighter Command had started the battle with a pilot deficit of about 14 percent.[23] During the skirmishing of July and the heavier battles of August, casualties increased this proportion and, inevitably, amongst those lost were the experienced pilots and leaders. By the beginning of September, 11 squadron commanders and 39 flight commanders would have been killed or injured out of the 143 who had seen action.[24] Trawls amongst the other commands and the Royal Navy eased the problem somewhat but on the other hand, operational training, the last step before combat, had to be progressively cut from six to two weeks.[25] Many of the replacement pilots would not have even fired the guns on a fighter and would have less than 20 hours flying time on Hurricanes or Spitfires. In the weeks ahead, it would not only be the lack of experience of the newcomers, but also the additional strain on the dwindling core of experienced pilots that would cause the most serious crisis.

When the Luftwaffe resumed its attacks on 24th August, the defender's problem rapidly increased. Goering's injunction to "do the utmost damage possible to the enemy's fighters" was being carried out with a vengeance and with a tactical versatility which taxed Park's wits to the utmost.[26] Decoy raids by small groups of fighters which the radar system could not distinguish from bombers, continuous

patrols in the Channel which would suddenly turn into major raids, again the radar system was unreliable as to numbers, low-level sneak attacks, all stretched the system to the breaking point. Raids were now concentrated against the fighter bases and all Park's vital sector stations were attacked and damaged to a greater or lesser extent. Despite the sterling efforts of all involved, the sector stations were inexorably losing their ability to control their full complement of fighters and the squadrons themselves were becoming exhausted.

It was at this critical moment that a long-term, smouldering argument developed into an open row between Park and Leigh-Mallory, who controlled No 12 Group, which adjoined No 11 Group to the north. Leigh-Mallory felt that the best way of destroying the enemy was to mass more fighters against their formations, even if this took longer and thus resulted in interceptions after the bombers had attacked their targets. Following these precepts, there were occasions when 12 Group, after being asked to cover 11 Group stations, failed to arrive in time to prevent damage. Park was understandably upset and furthermore totally disagreed with Leigh-Mallory's concept. In Park's view, it would have inevitably led to greater damage to the fighter airfields, and to those in his Group in particular, and this was something that the system as a whole could not tolerate. Unfortunately, although he agreed wholeheartedly

with Park's point of view, Dowding had his own problems and failed to realise that there were grave differences of opinion between his two main subordinates.

Dowding was concerned with the increasing pilot shortage, with the inability of his Command to cope with the night raids which were gaining in strength and he was also being criticised in certain quarters for not packing more fighters into 11 Group. This last was comparatively easy to deal with; the airfields and the system itself could not have supported more squadrons. Besides, many of the squadrons in the other groups had only recently been withdrawn and needed time to replace losses and recover. The pilot problem came into stark focus in the early days of September.

> Experienced pilots were like gold dust, and each one lost had to be replaced by a untried man who for some time would be vulnerable until he acquired battle know-how. Fresh squadrons, moved in to replace tired units very often lost more pilots and aircraft than the formations they replaced. . . .[27]

These depressing truths forced Dowding to make a difficult decision. There would be no more general rotation of squadrons. Instead, they would be grouped into three categories. Category A squadrons would be those in 11 Group and the immediately adjoining sectors. Category B squadrons would be kept up to full strength to be used, if necessary, to replace exhausted Category A squadrons. In fact, only two squadrons were placed in this category. Finally,

Category C squadrons would become virtually training units, with their experienced pilots being drawn off to keep the A and B squadrons up to full strength.[28] Clearly, such a divisive measure could only be used in the short term, if the morale and overall capability of the Command as a whole was not to suffer. Dowding knew this but he also knew that it would not have to be carried on for any length of time. Unless the Germans invaded before the end of the month, shortening days and deteriorating weather would preclude any such endeavor. In the circumstances, Dowding's decision was both reasonable and logical. It would certainly stiffen the defence in the operational area, for instead of facing formations with an undue proportion of neophytes in them, the Luftwaffe would be meeting squadrons of experienced, battle-hardened veterans.

In the event, more help for 11 Group came from a most unlikely source. As we have seen, on 7th September the Luftwaffe turned its attention towards London. This allowed 11 Group to show its resilience and recover sufficiently to decisively defeat the Luftwaffe's attacks just eight days later. The events of 15th September effectively wrote finis to Sealion and although the Luftwaffe continued its raids for another seven weeks, the raison d'etre for the campaign no longer applied.

The Reckoning

Whichever way one looks at it, the Battle of Britain was a British victory and a German defeat. In part, the British won and in part the Germans lost. On the British side, a perceptive and well planned system, allied to technology, supported by accurate intelligence and commanded by astute leaders, overcame a numerical inferiority of more than three to one.

At the highest levels, the differences in capability and leadership between Dowding and Park on the one hand and their Luftwaffe counterparts on the other, is striking. The only valid criticism of Dowding lies in his failure to realise and reconcile the differences between Park and Leigh Mallory. Park proved himself a master of the operational art of air defence. He maintained a clear-eyed balance between preserving his force and inflicting damage on the enemy, despite his squadrons being quite often faced with local odds of up to five to one. Although by early September the Luftwaffe had achieved a measure of air superiority over Park's forces, it was still a long way from the air supremacy necessary to ensure the success of Sealion. The German Army and Navy and even the Luftwaffe were uncomfortably aware of this fact. And this was as close to victory as the Luftwaffe ever came.

On the German side, poor planning, poor leadership, and poor intelligence all contributed to the Luftwaffe's

defeat. It would appear that until Hitler himself ordered a study of an invasion of Britain to be made, which he did on 2nd July, nobody in the OKW had made any contingency plans for continuing hostilities against Britain subsequent to the fall of France.[29] This lack of foresight led inevitably to delays in mounting Adlerangriff. These delays were compounded by the Luftwaffe. By 20th July, the Luftwaffe had 2600 aircraft deployed against Fighter Command and yet Adler Tag, day one of Adlerangriff, did not take place until 13th August. History is littered with generals wasting time and losing battles. Admiral Lord Nelson, a brilliant tactician and a consummate strategist, often reminded both his subordinates and superiors to, "lose not a moment" but here was the Luftwaffe losing nearly four weeks of good campaigning time. This tardiness pushed the Germans close to their deadlines and was to have important repercussions later on.

Again on the planning side, it was not until 19th August, after effectively losing 20 percent of its force (10 percent to the British fighters and 10 percent by the withdrawal of the dive bombers) that the Luftwaffe adopted the correct strategy of concentrating against the British centre of gravity, Fighter Command. Even then, due partly to faculty intelligence, the British radars, a vital part of the air defence system, were not targetted. Poor intelligence was also a catalyst in causing the Luftwaffe

leadership to make its most significant error, when it decided to switch its attacks from Fighter Command onto London. But other factors were also apparent in this dramatic change of strategy. Lack of time, frustration, and Goering's pique at a British bombing pinprick, all played a part as did a general desire for a quick Blitzkrieg style victory. Such impatience is often no more than a mask for a lack of moral courage and a polite euphemism for an irresolute lack of determination. Fortunately for Britain, such charges could not be levelled against Fighter Command.

The Battle of Britain was the first defeat suffered by Germany in the Second World War. Fighter Command's victory ensured the survival of Britain and that, in turn, proved to be a major cause of the eventual defeat of Germany. Given the disparity of the forces involved, the Luftwaffe should have achieved air supremacy over the Channel and south-east England. Given the disparity in strategic wisdom, resolution and moral courage between the leaders, Fighter Command should have won. Napoleon is reported as saying that the "moral is to the material as three to one." In this particular case, the difference was just a little more and the margin was narrow, but it was sufficient.

CHAPTER IV

QUO VADIS

The Battle of Britain is of interest not only because it was one of the decisive battles of the Second World War but also because the factors which led to its outcome are still relevant today. Although, not necessarily an exhaustive list, the following aspects seem worthy of particular mention.

The Formulation of Strategy

For Fighter Command, the aim of the Battle of Britain was to prevent the Luftwaffe from gaining the necessary air supremacy to facilitate Sealion. There was never any doubt that this was the objective. On the German side however, their strategy was less clear cut. It took time for Goering and the Luftwaffe to concentrate directly on their enemy's centre of gravity, Fighter Command, and they then failed to maintain that aim in favor of the indirect approach against London. Of all the principles of war, the selection and maintenance of the correct aim is of paramount importance. If this is done badly, it becomes almost impossible to prosecute the war successfully. To an interested observer, it would appear that the American effort in Vietnam was burdened by a failure in this regard. Formulation of the aim must be the responsibility of the highest reaches of government and it must be clear, precise

and unambiguous. It may not be their only responsibility, but it is by far their most important. In an alliance, such as NATO, the problems are exacerbated by the differences between the nations, but if NATO is to succeed in fighting a war which it has failed to deter, these problems will have to be overcome. Unfortunately, there is scant evidence that they will be.

Command and Control

One of the main reasons that Fighter Command won the Battle of Britain was because of the excellence of its command and control system. Spheres of responsibility at all levels were strictly laid down and followed. Within their spheres of responsibility, subordinates were allowed considerable freedom of action without interference from above. As an example, although Park gave his Group some 35 instructions during the battle, it should be realised that in British military regulations, whereas orders are orders, instructions are only advice. Today, with technology enabling CinCs and such like to know in detail what is happening from minute-to-minute, and with a precocious press often demanding to know in detail what is going on, such a system of delegation is often difficult to follow. Nevertheless, the principle remains.

A commander should trust his subordinates and allow them the freedom to act as their judgement sees fit. Any senior commander who is unable to resist interfering in the

actions of his subordinates should either resign or fire his subordinates and replace them with those he can trust. Unless such a self-disciplined regime is followed, the junior officer will never be able to develop the experience and judgement necessary to allow him to accept the greater responsibility that higher rank brings. Whist this precept is generally accepted, there is evidence to suggest that it is not always followed.

Communications

Knitting the delicate web of the Fighter Command system together was a comprehensive communications net. Without this, the system could not have functioned. Today, with the technology available, it should not be beyond the wit of man to provide a secure and survivable communication system. Yet on almost every exercise and in operations such as the Falklands and Grenada, hard pressed fighting men have been bedeviled by the inadequacies of their communication systems. AT and T seems to be able to do it properly so the question why must be asked of the military leaders. Whether it is because of a lack of interest or too great a concern with the visible hardware of war is immaterial. Whatever the reason, the present situation is an indictment of military leadership.

Intelligence

Intelligence played an important role in the Battle of Britain. British intelligence was generally good whilst

on the German side, it barely rose above abysmal. Today, without straying into classified detail, it is fair to say that current intelligence approximates closer to the British rather than to the German model. The main problem lies more in the dissemination of information rather than its collection, and this is not helped by an overwhelming propensity for overclassification. Nevertheless, it is reasonable to imagine that up-to-date intelligence would be available in war.

Identification Friend or Foe (IFF)

The RAF introduced IFF 50 years ago. It proved to be very useful in the Battle of Britain and was updated and made more effective as the war went on. Today, IFF is a sham; it can be jammed or spoofed without any great difficulty and as a means of identification in war it is virtually useless. Despite this, most fighters, particularly those assigned to air defence, have long-range, air-to-air missiles as their main armament. To use such weapons to their best effect, they should be fired well beyond visual range (BVR). Unfortunately, their use in this manner is often constrained, because the fighter pilot cannot be sure that he is engaging an enemy, rather than a friendly, aircraft. In the fog of war, such as would obtain in Europe, the full potential of these BVR missiles would not be realised. This has been the case for far too long and a solution is still some way off.

Technology

Whilst the Luftwaffe enjoyed a slight technical edge in terms of fighter performance in the Battle of Britain, Fighter Command benefited from a considerable superiority in the fields of radar, communication and intelligence gathering. It is generally agreed that NATO forces still have a technical advantage compared with their WP opposite numbers but it is also agreed that the difference is decreasing. That danger is obvious but there are also other areas of concern. At times, it appears that our enthusiasm for technology is too indiscriminate. Whilst it is inevitable and right that doctrine should take account of technology, that technology should not drive but rather underpin doctrine. As an example, many companies in the defence electronics field are marketing what they call C^3I systems. This is dangerous rubbish. A true C^3I system is one in which science is thoughtfully applied to operational art and it depends even more on those who command and control than it does on technology.

Aircraft

Despite all the pre-war prognostications, it was the fighter and not the bomber that was to prove to be the true symbol of air power. This was the case not only in the Battle of Britain but in virtually every campaign thereafter. Air superiority was the key to victory. Given the problems facing NATO in terms of numerical inferiority

and the assumption that the WP would be the attackers, the importance of NATO fighters is difficult to overestimate. In the face of a WP attack, it is likely that NATO would first have to gain a measure of air superiority before it could turn to close air support or air interdiction (AI). In such circumstances, NATO aircraft could find themselves involved in fighting for air superiority despite being trained and equipped for other roles. Thus, the prime requirement for any NATO tactical aircraft should be that it can meet WP fighters on at least equal terms and that it can, when necessary, be employed in the air superiority role. In this context an aircraft such as the A16 makes far more sense than the A10. Ideally, what is required is a multi-role aircraft with an air-to-air combat performance comparable to the best the WP can produce. Fortunately, both in the USA and in Europe this seems to be well understood.

Training

One of the crucial factors on the British side during the Battle of Britain, was an increasing lack of experienced and well trained fighter pilots. Too many barely trained RAF pilots found themselves up against experienced Luftwaffe opponents and they not only failed to destroy them but all too often fell to the enemy before they could gain combat experience. The Luftwaffe was to face a similar problem during the air battles over Germany,

especially after 1943. Today, NATO fighter pilots are, in general, better trained than those of the WP. This is good, but there are voices being raised to suggest that training should be reduced to save money. This is, of course, a false economy. But the worrying fact is that economists have power. If it is necessary to save money, then a cut in force levels would be far less damaging than a cut in training.

Battle of Britain - 1990

In any European war, it is likely that the United Kingdom would be a lucrative target for the WP air forces. A considerable proportion of NATO reinforcements would funnel through the UK and the country itself would be the base for a considerable number of NATO aircraft, especially nuclear capable forces. Hopefully, an air assault against the UK would not be a precursor to invasion but rather part of a WP offensive counter air or AI strategy. Nevertheless, as the Luftwaffe found in the Battle of Britain and as the USAAF found in its strategic bombardment of Germany, the key to success lies in firstly defeating the enemy air defences. There are, of course, differences in the means available to present day forces as compared with those of the Luftwaffe. For instance, the stand-off threat did not apply in 1940. Similarly, speeds are greater, night attacks should be more accurate and electronic warfare (EW) is far more pervasive than it was. On the other hand, the defence still needs a

robust C^3I system and many of the principles that gave victory in 1940 are equally important today. The UK air defence system is currently the subject of a major re-equipment programme. It is a comforting fact to one who has been involved in air defence for some 25 years, that the same concepts that underpinned Dowding's philosophy in 1940 are still being applied today. Dowding and Park served their country well, not only in the Battle of Britain itself but also in the legacy they left.

CHAPTER V

CONCLUSION

The Battle of Britain was one of the decisive battles of the Second World War. It was won and lost because of factors which have caused victory and defeat throughout the history of warfare. Superior strategy, better leadership, better intelligence, effective use of the available technology and greater skill in operational art all contributed to the British victory. These same determinants apply today, with just as much force as they ever did.

Looking at the present state of NATO air defences, there are causes both for satisfaction and concern. In the areas of intelligence, aircraft, training, and system development matters seem to be developing along the right lines. In addition, technology also appears to be maintaining an advantage for the alliance, although there are danger signs in an increasing belief that technology is all that matters. However, it is in the spheres of the formulation of strategy, command and control, communications and IFF that the real causes for concern are found. To make NATO truly capable of overcoming a similar numerical inferiority to that faced by the British in 1940, problems in these fields must be overcome.

Winston Churchill said of the Second World War that "This war will be won by science thoughtfully applied to operational requirements." And in the broad sense, operational requirements include leadership and strategic vision. Wars have always been won and lost in the same way; "Plus ca change, plus c'est la meme chose."

NOTES

CHAPTER II (Pages 3-13)

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14. Quoted in Ibid, p. 178.

15. Wood and Dempster, Op Cit, p. 48.

16. Ibid, p. 101.

17. Ibid, pp. 104-5.

18. Collier Op Cit, p. 287.

CHAPTER III (Pages 14-37)

1. Klee, Op Cit, p. 80.
2. Ibid, pp. 83-4.
3. Terraine, Op Cit, pp. 185-6.
4. Wood and Dempster, Op Cit, p. 279.
5. Collier, Op Cit, pp. 216-7.
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8. Wood and Dempster, Op Cit, p. 360.
9. Ibid, p. 233.
10. Klee, Op Cit, p. 80.
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12. Mason, Op Cit, p. 237.
13. Wood and Dempster, Op Cit, pp. 268-9.
14. Ibid, pp. 262-278.
15. Mason, Op Cit, p. 285.
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18. Klee, Op Cit, p. 91.
19. Quoted in Terraine, Op Cit, p. 219.
20. Robert Wright, Dowding and the Battle of Britain, MacDonald, 1969, p. 146.
21. Mason, Op Cit, p. 285.
22. Terraine, Op Cit, p. 185.
23. Wood and Dempster, Op Cit, p. 462.
24. Mason, Op Cit, p. 334.

25. Collier, Op Cit, p. 146.

26. Terraine, Op Cit, p. 194.

27. Wood and Dempster, Op Cit, pp. 318-320.

28. Mason, Op Cit, p. 355.

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